April 12, 1949. H. C. WINKEL 2,467,246

GRID CASTING MOLD

Filed Dec. 26, 1944

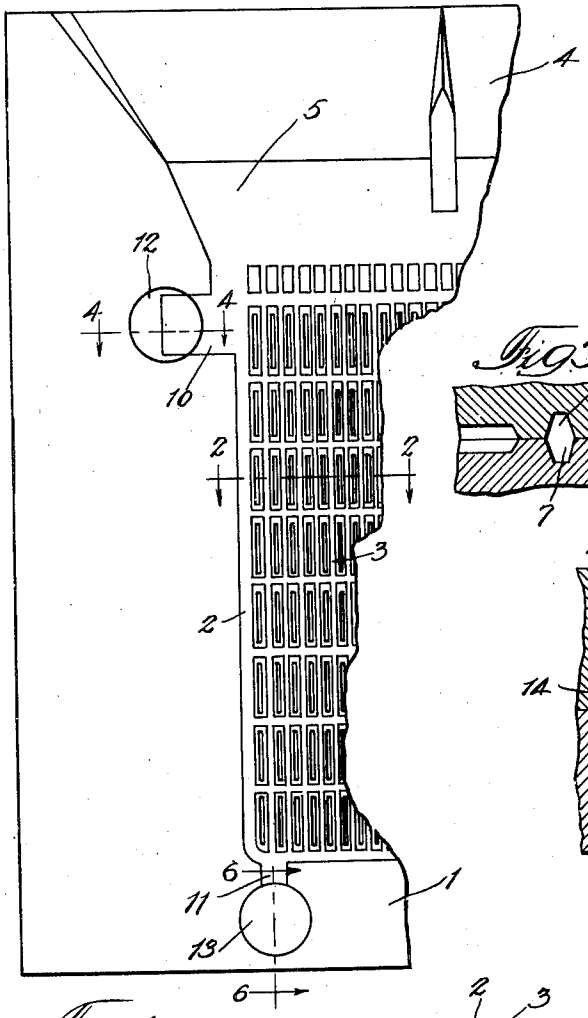


Fig. 1.

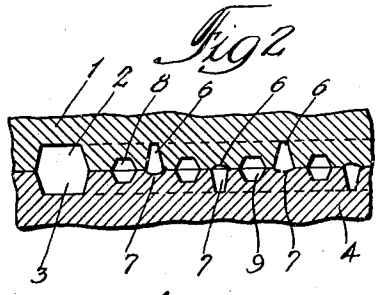


Fig. 2

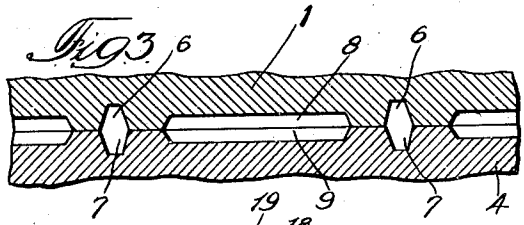


Fig. 3.

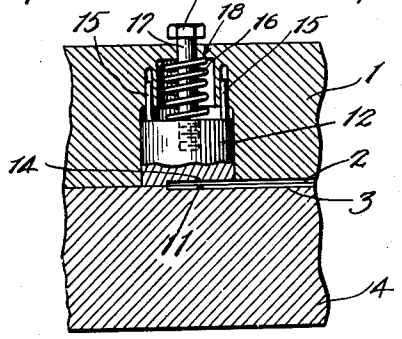


Fig. 4.

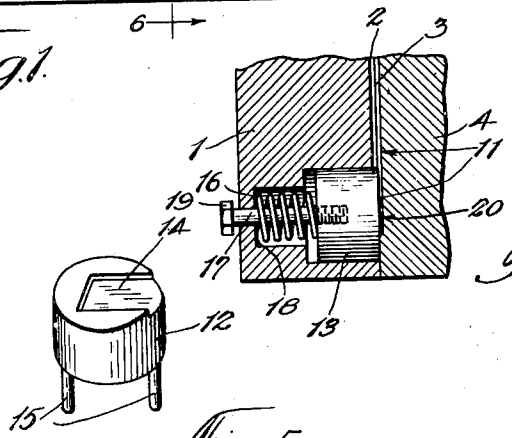


Fig. 6.

Fig. 5.

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Patented Apr. 12, 1949 2,467,246

UNITED STATES PATENT OFFICE

2,467,246

GRID CASTING MOLD

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Application December 26, 1944, Serial No. 569,715

4 Claims. (Cl. 22—153)

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My invention relates to grid casting molds.

This application is a continuation-in-part of my co-pending application Serial No. 432,993, filed March 2, 1942, which has become Patent No. 2,365,740 which is a division of my co-pending application Serial No. 354,495, filed August 28, 1940, which has become Patent No. 2,278,815.

One of the objects of my invention is to provide a grid casting mold of the type having two mold sections having provisions for preventing the formation of a fin at the parting line at certain parts of the periphery of the grid, such as the edges of the grid locating lugs.

Further objects and advantages of the invention will be apparent from the description and claims.

In the drawings, in which my invention is illustrated,

Figure 1 is a plan or face view of a mold section which cooperates with a similar mold section for forming the grid;

Fig. 2 is a section on the line 2—2 of Fig. 1 on an enlarged scale;

Fig. 3 is a section of Fig. 1 on an enlarged scale;

Fig. 4 is a section on the line 4—4 of Fig. 1;

Fig. 5 is a perspective view of the spring-pressed plug shown in Fig. 4; and

Fig. 6 is a sectional view on the line 6—6 of Fig. 1.

Referring to the drawings in detail, the construction shown comprises a mold section or plate 1, the left-hand end of which is shown in Fig. 1, having a grid forming recess 2 therein cooperating with a similar grid forming recess 3 in the other mold section 4 to complete the grid forming recess 2. The two mold sections 1 and 4 are provided with complemental filling opening recesses 5 into which the molten metal is poured, which flows into the grid-forming cavity. The mating sections 1 and 4 are formed with cooperating grid-like recesses 6 and 7 for forming the strands of the grid and with cooperating recesses 8 and 9 forming compression chambers to assist in insuring that the mold cavities are completely filled with molten metal, as described in detail in the above parent application Serial No. 354,495, which has become Patent No. 2,278,815.

The mold is also shown provided with a number of projecting recesses 10 and 11 for forming grid lug cavities. For certain purposes, it is extremely desirable to have the periphery of these grid lugs, or at least certain portions thereof, definitely defined. The periphery of these grid lugs may, for example, be used in positioning the grid definitely in trimming the flash or fin from

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the periphery of the grid. In molding the grids, a fin or flash of greater or lesser extent will be formed along the periphery of the grid. In order to eliminate this fin on the periphery of the lugs, spring-pressed plugs 12 and 13 are provided, slidably mounted in recesses in one of the mold sections 1 and spring-pressed against the adjacent parting surface of the other mold section 4. In Figs. 4 and 5 are shown one of these spring-pressed plugs 12 in which a portion 14 of the grid lug forming cavity is formed in the face of the plug. In this form of plug, it is necessary that the cylindrical plug should not be free to rotate in the cylindrical recess in which it is mounted. To prevent any rotation, the plug 12 has secured to its inner face a pair of guide pins 15 which are guided in guide openings in the mold section 1. In order to press the plug toward the other mold section, a coil compression spring 16 is provided surrounding a stop pin 17 secured to the plug, the spring bearing against the inner surface of the plug 12 at one end and against a shoulder 18 formed in the mold section 1. The stop pin is provided with a head 19 to prevent the plug from being forced out of the recess in the mold section when the mold sections are separated.

In Fig. 6 is shown a fin-preventing spring-pressed plug construction similar to that just described which is not provided with a complemental recess 14 for cooperation with the lug forming recess 11 in the mold section. In this form, the portion of the grid lug in engagement with the face 20 of the spring-pressed plug 13 will have a thickness equal only to the depth of the lug-forming recess 11 in the mold section. In this form there is no need for the rotation preventing guide pins as it is immaterial whether or not the plug slips rotarily in the cylindrical recess.

Further modifications will be apparent to those skilled in the art and it is desired, therefore, that the invention be limited only by the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A grid casting apparatus comprising two cooperating mold sections having complemental grid-forming recesses and parting surfaces engageable with each other and bounding said recesses, one of said mold sections having a flash-preventing plug mounted thereon having an end face portion having spring-pressed sealing engagement with the bounding parting surface of the other section to prevent flash formation be-

tween the plug and parting surface and a second end face portion spaced from the opposing surfaces of said other section to enable molten metal to enter between said opposing surface and the second end face portion, said plug having a slide portion of uniform cross section slidably fitted in the mold section adjacent the periphery of the grid forming recess.

2. A grid casting apparatus comprising two cooperating mold sections having complemental grid-forming and lug-forming recesses and parting surfaces engageable with each other and bounding said recesses, one of said mold sections having a flash-preventing plug mounted thereon having an end face portion having spring-pressed sealing engagement with the bounding parting surface of the other section to prevent flash formation between the plug and parting surface, said plug having a slide portion of uniform cross section slidably fitted in the mold section adjacent the periphery of the grid forming recess, said other section having a lug bounding recess extending outwardly from the grid forming recess having a surface opposite an end face portion of the plug and spaced therefrom to enable molten metal to enter between said end face portion and said surface.

3. A grid casting apparatus comprising two cooperating mold sections having complemental grid-forming and lug-forming recesses and parting surfaces engageable with each other and bounding said recesses, one of said mold sections having a flash-preventing plug mounted thereon having an end face portion having spring-pressed sealing engagement with the bounding parting surface of the other section to prevent flash formation between the plug and parting surface, said plug having a slide portion of uniform cross section slidably fitted in the mold section adjacent the periphery of the grid forming recess, said other section having a lug bounding recess extending outwardly from the grid forming recess opposite an end face portion of the plug, said plug having a lug bounding recess in the end face opposite said first lug bounding recess.

4. A grid casting apparatus comprising two cooperating mold sections having complemental grid-forming and lug-forming recesses and parting surfaces engageable with each other and bounding said recesses, one of said mold sections having a flash-preventing plug mounted thereon having an end face portion having spring-pressed sealing engagement with the bounding parting surface of the other section to prevent flash formation between the plug and parting surface, said plug having a slide portion of uniform cross section slidably fitted in the mold section adjacent the periphery of the grid forming recess, said other section having a lug bounding recess extending outwardly from the grid forming recess opposite an end face portion of the plug, said plug having a lug bounding recess in the end face opposite said first lug bounding recess, said mold section and plug having means for preventing rotation of said plug in said section.

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